



Aalto University
School of Science

Version control

CS-C2120, Programming studio 2

30.1.2019

News

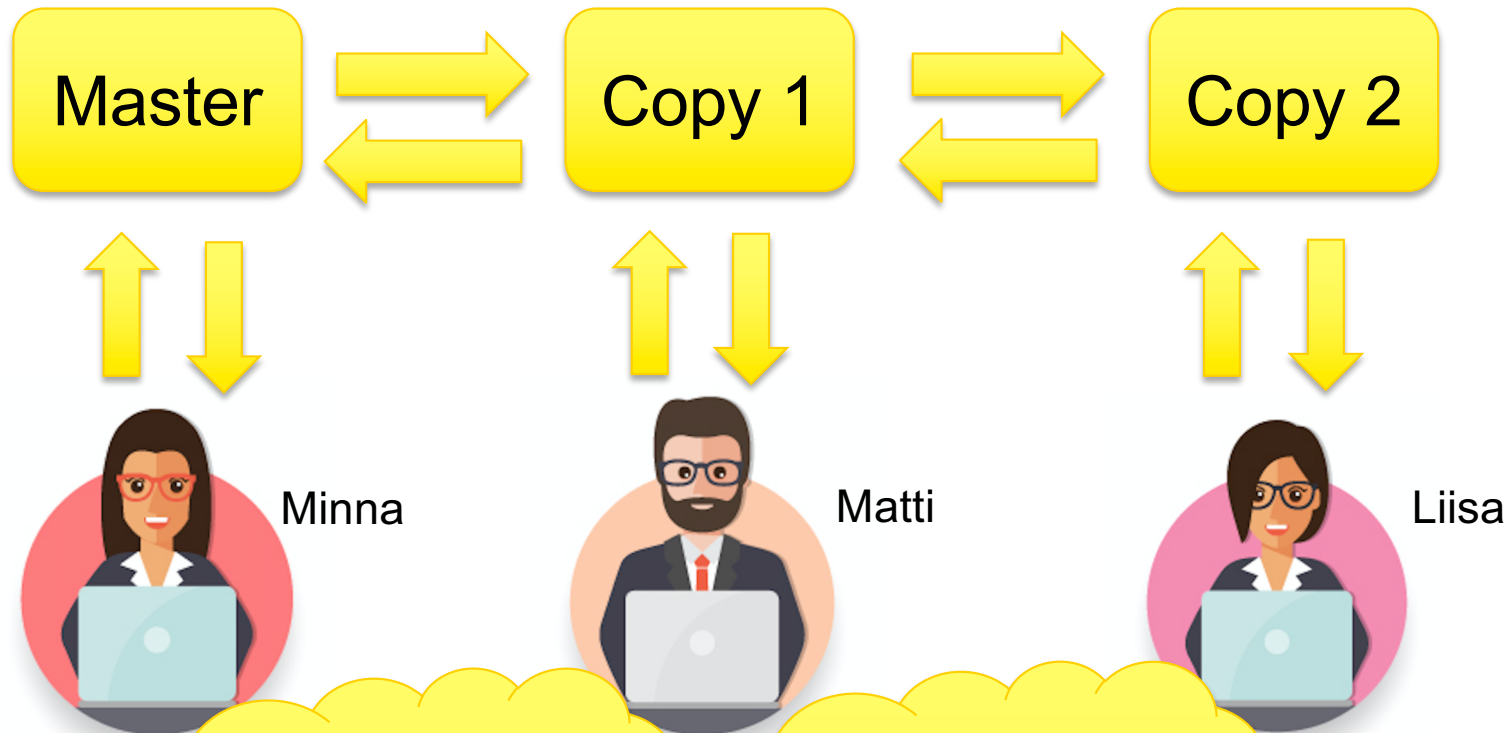
- Project pages opened on 29th
 - Chapter 17 opens on Fri 1st
 - Project topic selection by Feb 5th
 - Own topic suggestions to me by Feb 1st
 - UML-task results by Feb 7th
 - Reject & Resubmissions info to be sent on Jan 31st
 - Lecture in English on Friday 8th moved to Wednesday, Feb. 6th, 16-18, T1.
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What is version control?

- Software projects (and many others) are typically carried out by several people.
- How to maintain consistency in project development when several people from different sites contribute to project documents (or software code)?

Copying and merging

Problems



Inefficient,
errors?

Manual
operations

One master copy?

Problems

No concurrent access

Master

No version history

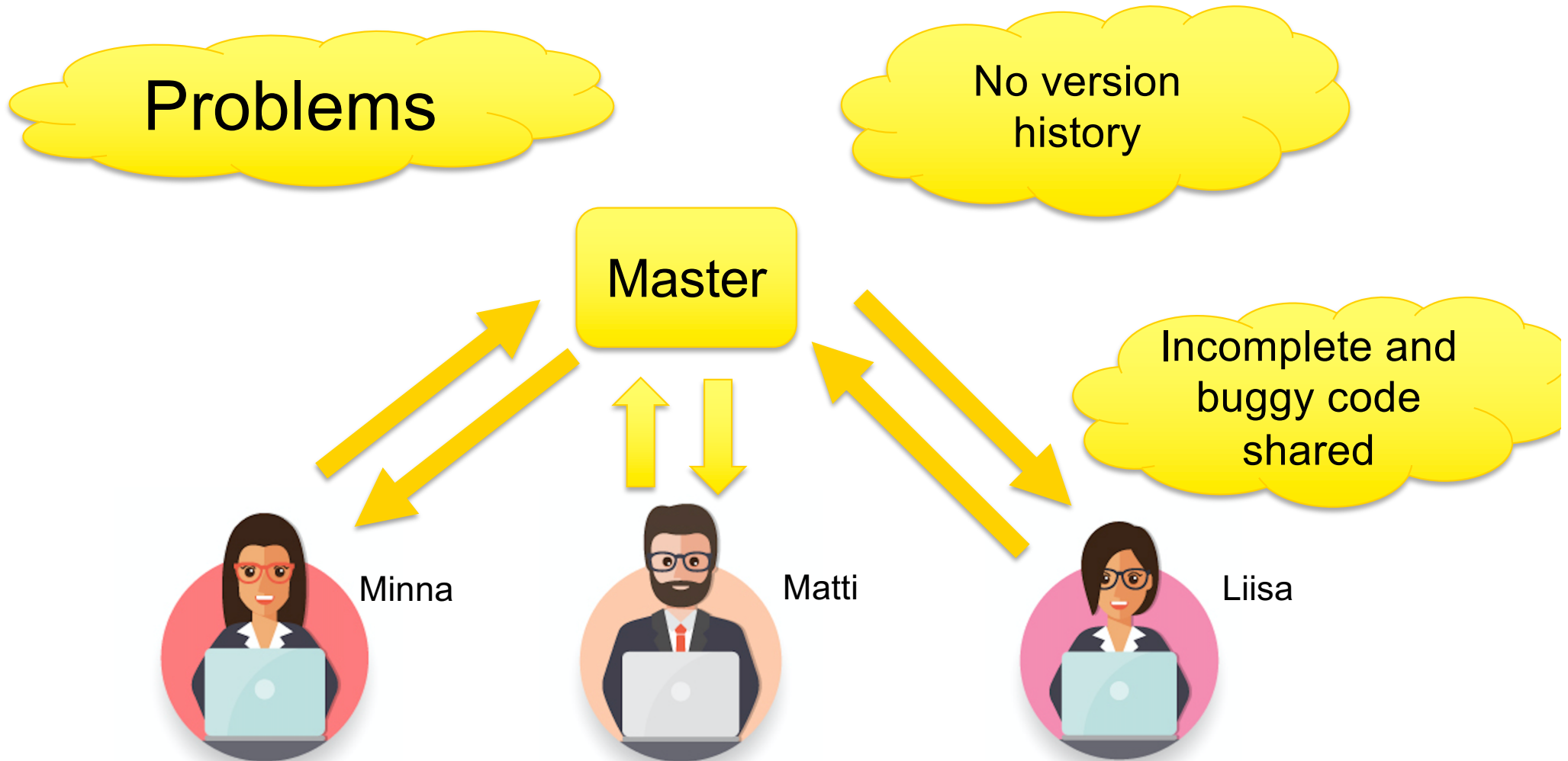
Minna

Matti

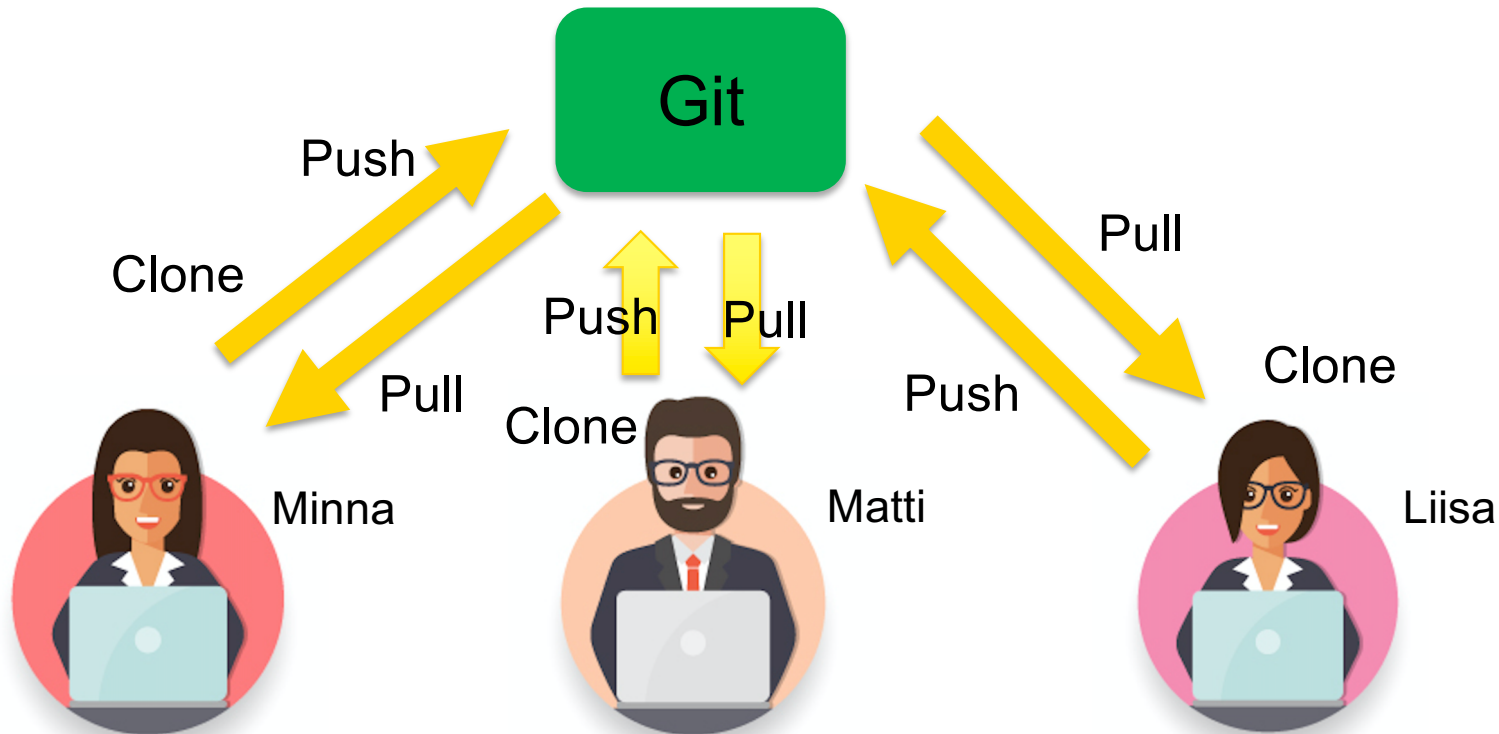
Liisa

Manual checking

Free access to master code?



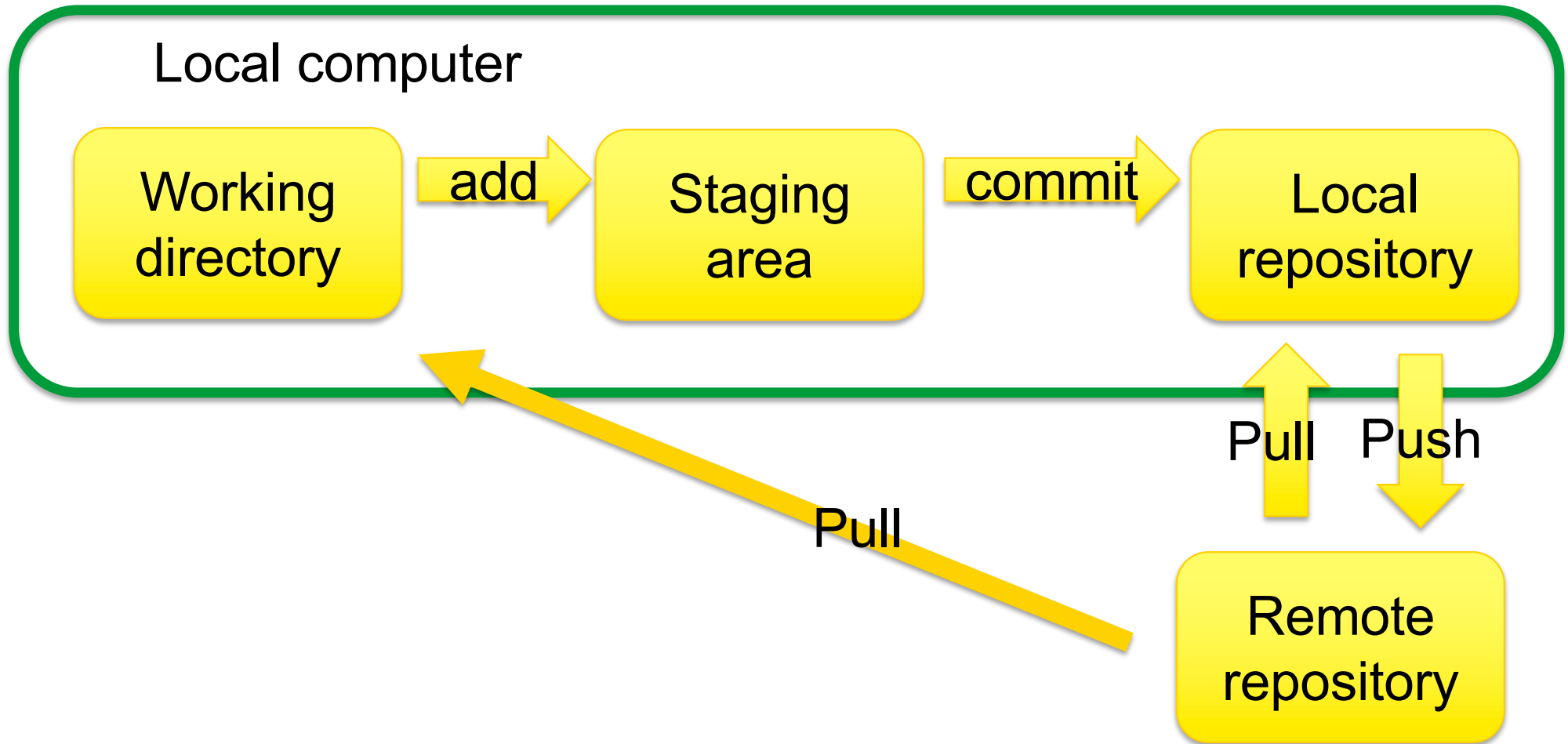
Version control system



Advantages

- Each person can work on their *local working copy* at their *local repository*
 - VCS (like Git) takes care of *master copy* at *remote repository*.
 - automatic tracking of changes in files (updates, added files, removed files)
 - Keeps version history
 - Can *merge* updates with the master sources
 - Identifies *conflicts* in merge requests
 - Allows cancelling changes (return to previous version)
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Concepts



Basic commands

- git clone
 - Copies remote repository to a local one
 - git add
 - Adds file(s) to staging area for version control
 - git commit
 - Registers the changes into version history
 - git push
 - Transfers committed changes to remote repository
 - git pull
 - Transfers changes in remote repository into local one and your working directory.
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Basic commands cont.

- `git init`
 - Registers a new (local) repository
 - `git diff`
 - Shows differences between working copy and registered copy
 - `git status`
 - Shows unregistered changes
 - `git branch ... / git checkout ...`
 - Manage version branches
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Version.aalto.fi

- Aalto's own git-repository
- Used in Studio-2:n projects
- Let us create a new project there and start using it locally
 - Here we look at this using command line
 - In Section 16.1 you train using it from Eclipse.